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REMARKS

This response is intended as a full and complete response to the non-final Office Action mailed July 7, 2005. In the Office Action, the Examiner notes claims 1-22 are pending of which claims 1-10 are rejected and claims 11-22 are withdrawn from consideration. By this response, claims 5 and 10 are amended.

In view of both the amendments presented above and the following discussion, Applicant submits that none of the claims now pending in the application are anticipated or obvious under the provisions of 35 U.S.C. §102 and §103.

It is to be understood that Applicant, by amending the claims, does not acquiesce to the Examiner's characterizations of the art of record or to Applicant's subject matter recited in the pending claims. Further, Applicant is not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims by filing the instant responsive amendment.

ELECTION/RESTRICTIONS

The Examiner has acknowledged Applicant's election with traverse of Group I, claims 1-10 in the reply filed on May 3, 2005. The Examiner has made the requirement final. However, Applicant believes the finality of the requirement is improper because the claims are directed to the same subject matter and do not require different search. Examiner asserts that claims 11-22 do not include "demodulating a recovered digital pilot signal to produce a feedback signal" and therefore require a different search. The subject matter of claims 11-22 does include that limitation. Specifically, claims 11 and 17 comprise the feedback signal with the limitation "a digital signal processor... coupled to a control input of the bias circuit," and claims 13 and 19 include demodulating with the limitation "a digital synchronous demodulator of the recovered digital pilot signal." Therefore, claims 11-22 includes "demodulating a recovered digital pilot signal to produce a feedback signal" and does not require a different search. Nonetheless, because

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applicant has timely traversed the restriction requirement in the previous response, the Applicant has reserved the right to petition.

OBJECTIONS

The Examiner has objected to claims 5, 6 and 10, stating that in claims 5 and 10, line 3, "a signal maintaining" should be —a signal while maintaining—. Applicant has amended claims 5 and 10 as suggested by the Examiner. That limitation was not found in claim 6, this claim 6 remain unamended. Therefore, Applicant submits that the Examiner's rejection is moot and should be withdrawn.

REJECTIONS

35 U.S.C. §102

Claims 1-2, 5-7 and 10

The Examiner has rejected claims 1-2, 5-7, and 10 under 35 U.S.C. §102(b) as being anticipated by McBrien et al. US 2002/0114047 (hereinafter "McBrien"). Applicant respectfully traverses the rejection.

Applicant's independent claim 1 (and similarly independent claims 6) recites:

1. A method of controlling a bias voltage of a Mach-Zender modulator (MZM) performing a non-return-to-zero (NRZ) modulation of an optical signal, comprising:
 - generating a digital pilot signal;
 - modulating the MZM using the digital pilot signal;
 - coupling a portion of an optical output signal from the MZM to a light detector;
 - processing an output signal of the light detector using a digital correlation filter to recover the digital pilot signal;
 - and
 - demodulating the recovered digital pilot signal to produce a feedback signal controlling the bias voltage of the MZM. (emphasis added).

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim"

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(Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). The McBrien reference fails to disclose each and every element of the claimed invention, as arranged in the claim.

The McBrien reference discloses an analog pilot signal (50). That signal is use to assist in the modulation of data. The continuous wave generated by Laser 14, combined with RF signal inputted at 11 is not digital pilot signal. Moreover, McBrien does not recover any pilot signals to assist in the biasing of the modulators. McBrien uses the dither signal to determined biasing. Specifically, "the DC voltage of the RF detector 122 contains the fundamental low frequency (e.g., 10kHz) dither signal when the phase of the RZ and NRZ waveforms are not aligned in phase." (See page 3, paragraph 27). Detection of this dither frequency allows for biasing of the modulators. (See page 3, paragraphs 28-30).

The McBrien reference fails to teach or suggest Applicant's "digital pilot signal" and using that digital signal to assist in the biasing of the modulator. Moreover, because McBrien does not even hint at the possibility of using a digital pilot signal, McBrien is also silent on modulating, recovering, and demodulating that digital pilot signal.

As such, Applicant submits that independent claims 1 and 6 are not anticipated and fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder. Furthermore, claims 2, 5 and 10 depend directly from independent claims 1 and 6 and recite additional features thereof. Accordingly, at least for the same reasons as discussed above, Applicant submits that these dependent claims are also not anticipated and fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder. Therefore, Applicant respectfully requests that the Examiner's rejection be withdrawn.

35 U.S.C. §103

Claims 3-4 and 8-9

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The Examiner has rejected claims 3-4 and 8-9 under 35 U.S.C. §103(a) as being unpatentable over McBrien, as applied to claims 1 and 6 above, respectively, in view of Kingsley et al. US 6,871,084 (hereinafter "Kingsley"). Applicant respectfully traverses the Examiner's rejection.

The McBrien and Kingsley references alone or in combination fail to teach or suggest Applicant's invention as a whole. For at the least the reasons discussed above in connection with the Examiner's §102 rejection of claims 1 and 6 in view of McBrien, Applicant submits that McBrien fails to teach or suggest Applicant's invention as a whole. Specifically, McBrien fails to teach or suggest Applicant's "digital pilot signal."

The Kingsley reference fails to bridge the substantial gap between McBrien and Applicant's invention. In particular, Kingsley discloses high impedance optical electrodes modulate light in response to life-form bio-potential and then converts the modulated light to an electrical signal that provides traditional EEG and EEC type output. Kingsley fails to teach or suggest Applicant's "digital pilot signal." Therefore, even if operably combinable, the combination fails to teach or suggest the invention as a whole.

Furthermore, Kingsley is non-analogous art. Kingsley is in a different field of endeavor and is solving a completely different problem as the present invention. Kingsley is in the area of electrodes used in the measurement of bio-potential signals produced by the living body. The problem Kingsley is trying to solve is directed towards elimination of macro shock situations. It is completely unrelated to trying to improve on controlling the bias voltage of Mach-Zehnder modulators used in high speed optical communications. Therefore, there is no motivation to combine and even when combined, it would not be operable.

As such, claims 3-4 and 8-9 depend directly or indirectly from independent claims 1 and 6 and recite additional features thereof. Accordingly, at least for the same reasons as discussed above, Applicant submits that these dependent claims are also not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are

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patentable thereunder. Therefore, Applicant respectfully requests that the Examiner's rejection be withdrawn.

SECONDARY REFERENCES


The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to Applicant's disclosure than the primary references cited in the Office Action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

CONCLUSION

Thus, Applicant submits that none of the claims presently in the application are anticipated or obvious under the provisions of 35 U.S.C. §102 and §103. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited. If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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